

Appln No. 10/562,751  
Amdt date September 9, 2008  
Reply to Office action of May 14, 2008

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A pattern comparison inspection method ~~which captures~~  
comprising:

capturing an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch; , and which detects  
conducting an inspection for presence/absence of a defect in said inspection target pattern by comparing image signals taken from positions located at a first integral multiple of said repeat pitch away from each other within an inspection region defined inside said repeated pattern region; and , said method comprising:

defining said inspection region by determining a boundary between said inspection region and an outside region thereof, wherein said defining said inspection region further comprises:

a reference position selecting step for selecting from among positions on said inspection target pattern, a reference position to be which is judged whether the selected reference position it should be included contained in said inspection region;

an image comparing step for comparing [[an]] a first image signal at said selected reference position with [[an]] a second image signal at a position located at a second integral multiple of said repeat pitch away from said selected reference position and a prescribed distance inward of the boundary of a region that is known to be said repeated pattern region; and

an inspection region setting step for setting said inspection region by containing determining said boundary such that said inspection region includes therein said selected reference position when a where said comparison result from of said first and second image signals indicates comparing step shows a value not greater than a prescribed threshold value.

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2. (Currently Amended) A pattern comparison inspection method ~~which captures~~  
comprising:

capturing an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch; ~~and which detects~~  
conducting an inspection for presence/absence of a defect in said inspection target pattern by comparing image signals taken from positions located at a first integral multiple of said repeat pitch away from each other within an inspection region defined inside said repeated pattern region; ~~and~~ ~~said method comprising:~~

defining said inspection region by determining a boundary between said inspection region and an outside region thereof, wherein said defining said inspection region further comprises:

~~a reference position selecting step for selecting a reference position to be which is judged~~  
whether ~~it~~ the selected reference position should be included ~~contained~~ in said inspection region, by incrementally shifting said reference position by a prescribed distance within said inspection target pattern;

~~an image comparing step for comparing~~ ~~[[an]]~~ a first image signal at said selected reference position with ~~[[an]]~~ a second image signal at a position located at a second integral multiple of said repeat pitch away from said selected reference position; and

~~an inspection region setting step for setting said inspection region by determining a position of said boundary based on said selected reference position as the boundary of said inspection region when a~~ where ~~comparison result from of said first and second image signals indicates performed by incrementally shifting said reference position by said prescribed distance shows a change greater than a prescribed threshold value.~~

3. (Currently Amended) A pattern comparison inspection method ~~which captures~~  
comprising:

capturing an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch; ~~and which detects~~

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conducting an inspection for presence/absence of a defect in said inspection target pattern by comparing image signals taken from positions located at a first integral multiple of said repeat pitch away from each other within an inspection region defined inside said repeated pattern region; and ~~said method comprising:~~

defining said inspection region by determining a boundary between said inspection region and an outside region thereof, wherein said defining said inspection region further comprises:

~~a reference position selecting step for selecting a reference position to be which is judged whether it~~ the selected reference position should be included ~~contained~~ in said inspection region, by incrementally shifting said reference position by a prescribed distance within said inspection target pattern;

~~an image comparing step for comparing~~ ~~[[an]]~~ a first image signal at said selected reference position with ~~[[an]]~~ a second image signal at a position located at a second integral multiple of said repeat pitch away from said selected reference position; and

~~an inspection region setting step for setting said inspection region by determining a position of said boundary based on said selected reference position as the boundary of said inspection region when where a comparison result from of said first and second image signals indicates comparing step performed by incrementally shifting said reference position by said prescribed distance shows a maximum change.~~

4. (Currently Amended) A pattern comparison inspection method as claimed in any one of claims 1 to 3, wherein said image comparing signal ~~[[step]]~~ compares said image signal at said selected reference position with ~~[[an]]~~ a second image signal at a position located further inside said repeated pattern region than said reference position is.

5. (Currently Amended) A pattern comparison inspection method as claimed in any one of claims 1 to 3, wherein a position located at a prescribed distance inward of the boundary of said repeated pattern region is selected as said reference position, and

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said inspection region is set by repeatedly performing said ~~image~~ comparing image signals ~~[[step]]~~ while incrementally moving said selected reference position outwardly toward the boundary of said repeated pattern region.

6. (Currently Amended) A pattern comparison inspection method as claimed in ~~claim 2 or 3~~ any one of claims 2 to 3, further comprising ~~a tentative region setting step for setting~~ a tentative region at a prescribed distance inward of the boundary of said repeated pattern region, and wherein

said ~~image~~ comparing image signals ~~[[step]]~~ compares said image signal at said reference position with ~~[[an]]~~ a second image signal at a position located inside said tentative region.

7. (Currently Amended) A pattern comparison inspection method as claimed in any one of claims 1 to 3, further comprising ~~a tentative region setting step for setting~~ a tentative region at a prescribed distance inward of the boundary of said repeated pattern region, and wherein

a position located inside said tentative region is selected as said reference position, and  
said inspection region is set by repeatedly performing said ~~image~~ comparing image signals ~~[[step]]~~ while incrementally shifting said selected reference position outwardly toward the boundary of said repeated pattern region.

8. (Currently Amended) A pattern comparison inspection method as claimed in any one of claims 1 to 3, wherein a position located at a prescribed distance outward of the boundary of said repeated pattern region is selected as said reference position, and

said inspection region is set by repeatedly performing said ~~image~~ comparing image signals ~~[[step]]~~ while incrementally shifting said selected reference position inwardly toward the boundary of said repeated pattern region.

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9. (Currently Amended) A pattern comparison inspection apparatus ~~which comprises~~ for conducting an inspection for presence/absence of a defect within an inspection region comprising:

an imaging portion which captures an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch[[,]];

a storing portion which stores said captured image of said inspection target pattern[[,]];

a pattern comparing portion which compares, on said stored image, image signals taken from positions located at a first integral multiple of said repeat pitch away from each other within said [[an]] inspection region defined inside said repeated pattern region<sub>1</sub>, and

a defect detecting portion which detects a defect in said inspection target pattern based on a result of said comparison<sub>1</sub>, ~~said apparatus comprising:~~

an inspection region defining portion which defines said inspection region by determining a boundary between said inspection region and an outside region thereof;

a reference position selecting portion which selects from ~~among~~ positions on said inspection target pattern<sub>1</sub> a reference position to be ~~which is judged whether the selected reference position~~ it should be included contained in said inspection region; and

an image comparing portion which compares [[an]] a first image signal at said selected reference position with a second [[an]] image signal at a position located at a second integral multiple of said repeat pitch away from said selected reference position and a prescribed distance inward of the boundary of ~~a region that is known to be~~ said repeated pattern region[[; and]],  
wherein

~~an inspection region setting portion which sets~~ said inspection region defining portion defines said inspection region by ~~containing~~ determining said boundary such that said inspection region contains therein said selected reference position [[when]] where a comparison result from said image comparing portion indicates ~~shows~~ a value not greater than a prescribed threshold value.

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10. (Currently Amended) A pattern comparison inspection apparatus ~~which comprises~~ for conducting an inspection for presence/absence of a defect within an inspection region comprising:

an imaging portion which captures an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch[[,]];

a storing portion which stores said captured image of said inspection target pattern[[,]];

a pattern comparing portion which compares, on said stored image, image signals taken from positions located a first integral multiple of said repeat pitch away from each other within an inspection region defined inside said repeated pattern region; ~~and~~

a defect detecting portion which detects a defect in said inspection target pattern based on a result of said image signals comparison; ~~said apparatus comprising:~~

an inspection region defining portion which defines said inspection region by determining a boundary between said inspection region and an outside region thereof;

a reference position selecting portion which selects a reference position to be ~~which is~~ judged whether the selected reference position it should be included ~~contained~~ in said inspection region, by incrementally shifting said selected reference position by a prescribed distance within said inspection target pattern; and

an image comparing portion which compares [[an]] a first image signal at said reference position with a second [[an]] image signal at a position located at a second integral multiple of said repeat pitch away from said selected reference position[[; and]], wherein

~~an inspection region setting portion which sets said inspection region defining portion~~ defines said inspection region by determining a position of said boundary based on said reference position as the boundary of said inspection region when where a comparison result, obtained from said image comparing portion as a result of incrementally shifting said reference position by said prescribed distance, indicates ~~shows~~ a change greater than a prescribed threshold value.

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11. (Currently Amended) A pattern comparison inspection apparatus ~~which comprises~~ for conducting an inspection for presence/absence of a defect within an inspection region comprising:

an imaging portion which captures an image of an inspection target pattern having a repeated pattern region with repeated patterns formed in a repeated fashion at a prescribed repeat pitch[[],];

a storing portion which stores said captured image of said inspection target pattern[[],];

a pattern comparing portion which compares, on said stored image, image signals taken from positions located a first integral multiple of said repeat pitch away from each other within an inspection region defined inside said repeated pattern region; ~~and~~

a defect detecting portion which detects a defect in said inspection target pattern based on a result of said comparison; ~~said apparatus comprising:~~

an inspection region defining portion for defining said inspection region by determining a boundary between said inspection region and an outside region thereof;

a reference position selecting portion which selects a reference position ~~to be which is~~ judged whether the selected reference position ~~it should be included contained~~ in said inspection region, by incrementally shifting said selected reference position by a prescribed distance within said inspection target pattern; and

an image comparing portion which compares [[an]] a first image signal at said reference position with a second [[an]] image signal at a position located at a second integral multiple of said repeat pitch away from said reference position[[]; and[]], wherein

~~an inspection region setting portion which sets~~ said inspection region defining portion defines said inspection region by determining a position of said boundary based on said reference position as the boundary of said inspection region when where a comparison result, obtained from said image comparing portion as a result of incrementally shifting said reference position by said prescribed distance, shows a maximum change.

12. (Currently Amended) A pattern comparison inspection apparatus as claimed in any one of claims 9 to 11, wherein said image comparing portion compares said image signal at said selected reference position with an image signal at a position located farther inside said repeated pattern region than said selected reference position[[ is]].

13. (Currently Amended) A pattern comparison inspection apparatus as claimed in any one of claims 9 to 11, wherein a position located at a prescribed distance inward of the boundary of said repeated pattern region is selected as said reference position, and  
said inspection region is set by repeatedly performing said comparison by said image comparing portion while incrementally moving said reference position outwardly toward the boundary of said repeated pattern region.

14. (Currently Amended) A pattern comparison inspection apparatus as claimed in any one of claims 10 to 11~~claim 10 or 11~~, further comprising a tentative region setting portion which sets a tentative region at a prescribed distance inward of the boundary of said repeated pattern region, and wherein

said image comparing portion compares said image signal at said selected reference position with an image signal at a position located inside said tentative region.

15. (Currently Amended) A pattern comparison inspection apparatus as claimed in any one of claims 9 to 11, further comprising a tentative region setting portion which sets a tentative region at a prescribed distance inward of the boundary of said repeated pattern region, and wherein

a position located inside said tentative region is selected as said reference position, and  
said inspection region is set by repeatedly performing said comparison by said image comparing portion while incrementally shifting said reference position outwardly toward the boundary of said repeated pattern region.



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16. (Currently Amended) A pattern comparison inspection apparatus as claimed in any one of claims 9 to 11, wherein a position located at a prescribed distance outward of the boundary of said repeated pattern region is selected as said reference position, and

said inspection region is set by repeatedly performing said comparison by said image comparing portion while incrementally shifting said reference position inwardly toward the boundary of said repeated pattern region.

17. - 24. (canceled)